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TRAINING PROGRAM FOR THE ANALYSIS OF FORENSIC CASEWORK USING PCR-BASED STR FLUORESCENCE IMAGING ANALYSIS AT THE POWERPLEX® 16 BIO LOCI	Issue No. 2
	Effective Date: 1-August-2005
14 TESTIMONY AND EXPERT WITNESS QUALIFICATION	
14.1 GOALS:	
14.1.1 To demonstrate technical knowledge by successfully completing an oral examination.	
14.1.2 To successfully demonstrate skill in analysis and testimony by completing the analysis of a mock case and testifying on that case in a mock trial.	
14.1.3 To become familiar with the legal aspects of DNA typing, including common challenges, controversial cases and case histories.	
14.2 TASKS:	
14.2.1 Undergo an oral examination.	
14.2.2 Conduct analysis on a mock case, prepare a Certificate of Analysis and testify to the results of the analysis in a mock trial.	
14.2.3 Become familiar with DNA testing guidelines/standards set forth by the following groups:	
<ul style="list-style-type: none"> • Scientific Working Group on DNA Analysis Methods (SWGDM) • American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB®) • FBI Quality Assurance Standards 	
14.2.4 Observe examiners testify when possible.	
14.2.5 Participate in at least one pretrial conference with a qualified examiner.	
14.2.6 Give lectures on DNA analysis to law enforcement personnel and lay groups to practice explanations and public speaking skills.	
14.2.7 Read applicable literature and become familiar with glossary terms. Refer to Appendices A, B, and C.	
14.3 TRAINING EVALUATION:	
14.3.1 Knowledge	
14.3.1.1 Mini-mock trials and/or question and answer session.	
14.3.2 Skills	
14.3.2.1 The trainee should demonstrate the ability to clearly and accurately testify to STR analytical results and conclusions, including statistical information.	
14.3.3 Completion of the trainee checklist by the training coordinator.	

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<p>STUDY QUESTIONS:</p> <ol style="list-style-type: none"> Are you certified or do you have a license to conduct forensic DNA analyses? Are you an expert in the field of molecular biology? How do you become a member of a professional organization such as the AAFS? Can anyone be a member? If I pay my dues can I (Defense Attorney) be a member too? What is a proficiency test? Do you participate in proficiency testing? What is your error rate? Do you participate in blind proficiency testing? What does SWGDAM stand for and what is this organization's function? Have you had any statistics courses? Are you a statistician? population geneticist? What is a DNA audit? How often is your laboratory audited? Who performs the audit? What is the rationale for having different laboratory areas for isolation, PCR setup, amplification and typing? What controls do you run during your PCR analyses? What is a null allele? What is the difference between a genotype and a phenotype? What is the misincorporation rate of the <i>Taq</i> enzyme? When was the first time PCR was used in this country? in Virginia? How were the databases that are used by you created? Explain each step in detail. How large is your database? How can you calculate 1 in billions or trillions from a database of only 100 people for each race? What is linkage disequilibrium and how does this affect PowerPlex® 16 BIO analyses? What does independence mean? What is Hardy Weinberg Equilibrium? Is your database in Hardy Weinberg Equilibrium? How do allele frequencies differ from genotypic frequencies? How are allele frequencies calculated? How are genotype frequencies calculated? What are substructures or subpopulations and how does the existence of these affect your reporting of statistics? Why do you report Caucasian, Black and Hispanic frequencies versus reporting only one general frequency? If my client were Asian, how would you determine the frequency? 	

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<p>21. What does the Power of Discrimination mean (Pd)? How is this computed?</p> <p>22. What is a random match probability? How is it calculated? When is it used?</p> <p>23. What is a likelihood ratio? How is it calculated? When is it used? Why is it used instead of a random match probability?</p> <p>24. What is CPE? How is it calculated? When is it used? Why is it used instead of a random match probability or a likelihood ratio?</p> <p>25. What does DAB stand for and what is its function? How was it created and why? Is it still in existence?</p> <p>26. Explain the purpose of the FBI Quality Assurance Standards.</p> <p>27. What does ASCLD/LAB® stand for and what is its function?</p> <p>28. Who serves as the Department's Quality Assurance Officer?</p> <p>29. Who serves as the Department's Safety Officer?</p>	

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CHECKLIST FOR TESTIMONY AND EXPERT WITNESS QUALIFICATION

Name of Trainee: _____

- Trainee is skilled in expressing results and conclusions orally in a simple, clear, concise and technically correct manner.

Date:_____ Training Coordinator:_____

Comments:_____
- Trainee is adept at answering questions on all aspects of forensic DNA analysis based on education, training, knowledge, experience and skills.

Date:_____ Training Coordinator:_____

Comments:_____
- Trainee is skilled in properly communicating with attorneys, judges, and juries.

Date:_____ Training Coordinator:_____

Comments:_____
- Trainee is familiar with the use of testimony aids.

Date:_____ Training Coordinator:_____

Comments:_____
- Trainee has observed qualified DNA examiners testify.

Date:_____ Training Coordinator:_____

Comments:_____
- Trainee has participated in at least one pretrial conference with a qualified examiner.

Date:_____ Training Coordinator:_____

Comments:_____
- Trainee has read and understands all applicable literature.

Date:_____ Training Coordinator:_____

Comments:_____

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8.	Trainee has participated in mini-mock trials and/or question and answer sessions. Performance was satisfactory.	
	Date:_____ Training Coordinator:_____	
	Comments:_____	
9.	Trainee has successfully completed the final comprehensive oral examination.	
	Date:_____ Training Coordinator:_____	
	Comments:_____	
10.	Trainee has successfully completed the analysis, including all appropriate documentation, of the final mock trial case.	
	Date:_____ Training Coordinator:_____	
	Comments:_____	
11.	Trainee has successfully completed one formal, comprehensive mock trial as an expert witness.	
	Date:_____ Training Coordinator:_____	
	Comments:_____	
◆END		